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The
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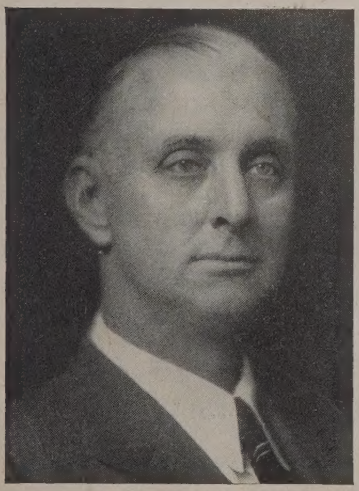
Official Organ of the Florida Entomological Society

VOL. XXVI DECEMBER, 1943 NO. 4

DOCTOR WILMON NEWELL

The Florida Entomological Society has, since our last issue, suffered the great loss of its most prominent member — Dr. Wilmon Newell, provost of Agriculture, who died at his home in Gainesville, Florida, on October 25th, after about a year's illness. Doctor Newell was always a strong supporter of the Society and a charter member. Indeed, without his hearty endorsement, the Entomological cal Society would not have been formed, at least, at that time. From 1919 to 1931, he was associate editor of the Florida Entomologist.



Doctor Newell was born at Hull, Iowa, March 4, 1878. He spent the early years of his life in Iowa. In 1907, he married Helen, the daughter of Dr. and Mrs. O. P. Mabee, of Galesburg, Illinois.

He received his B.S. from Iowa State College in 1897, his M.S. in 1898, and an honorary Sc.D. in 1920. Clemson College also conferred the Sc.D. on Doctor Newell.

Doctor Newell was Assistant in Entomology at the Iowa Agricultural Experiment Station from 1897 to 1899. He held the same position at the Ohio Agricultural Experiment Station from 1899 to 1902. From 1902-1903, he was Associate Entomologist and Apiarist at the Texas Agricultural Experiment Station. From 1903-1904, he was State Entomologist of Georgia. From 1904-1910, he was Entomologist of the State Crop Pest Com-

mittee of Louisiana. In 1910, he returned to Texas as Entomologist of the Experiment Station and State Entomologist, a position which he held until 1915, when he came to Florida as Plant Commissioner of the State Plant Board. In 1921, he became Dean of the Agriculture College and Director of the Florida Agricultural Experiment Station and of the Agricultural Extension Division.

He was a fellow of the American Association for the Advancement of Science, a member of the Entomological Society of America, and American Association of the Economic Entomologists (President in 1920). He was also a member of various other professional and civic organizations. The Newell Entomological Society was named after him, as also, was, posthumously, the reconstructed old Experiment Station Building on the Campus of the University of Florida.

Doctor Newell did pioneer research work on the control of the boll weevil in Louisiana and he was very much interested in apiary work in Texas and other states, but he is best known for his activities in pest control and eradication. On first coming to Florida, he became very active in the campaign for the eradication of the citrus canker, a very serious disease which had been introduced, presumably from Japan, a few years earlier. This he carried through to a completely successful conclusion. Later, upon the discovery of the Mediterranean fruit fly in Florida, he organized the fight against this pest, which ultimately resulted in its eradication. — Ed.

THE ARMADILLO IN FLORIDA

By H. B. SHERMAN

Within the past 25 years the Texas armadillo, *Dasypus novemcinctus texanus* (Bailey), has been added to the fauna of Florida and, judging from recent reports, is thriving in certain localities east of the St. Johns River. Its bizarre appearance invariably arouses the curiosity of those seeing this animal for the first time, while its habits render it of peculiar interest to students of the biota of the state. The following discussion has to do with a brief description of the extension of the geographical range and habits of this mammal.

The armadillo may be readily recognized by the abundance of scales, of which there are 9 transverse bands of larger ones

across the body, which explains its specific name. The head is somewhat pig-like in shape, but the ears are proportionately large. The claws bear a superficial resemblance to hoofs and its gait suggests that of a pig with a long tail which it drags, thus leaving a recognizable trail in suitable soil. Hairs project from between the scales and are more abundant on the under side of the body where the scales are nearly absent. The teeth are degenerate, lack enamel, and are shaped like pegs. The eyes are small and the sense of vision is poorly developed. The sense of smell is apparently relied upon to a large extent.

According to Strecker (1926) the principal home of the armadillo in the United States was the lower Rio Grande Valley until the early seventies of the last century. Since that time it has gradually spread northward and eastward. He states "It seems to be equally at home in alluvial creek bottoms, the edges of swamp tracts, rock-walled gulches, limestone hills, chapparal prairie and sandy islands." A more detailed account of the extension of the range of this animal is given by Taber (1939), who shows that it was not until after 1910 that it came to inhabit eastern Texas. Records of the occurrence of this animal are given by Bailey (1931) for southeastern New Mexico, by Blair (1936) for Oklahoma, and by Dellinger and Black (1940) for Arkansas. According to Newman (1913) the northern extent of the range of this species is limited by cold weather.

In Louisiana, Lowery (1936) states that in 1926 the occurrence of the armadillo would have been considered accidental, but at the time of writing they were abundant in the southwestern part of the state, where they do not avoid the swamps. One hunter is reported to have caught at least 100 of these animals in the vicinity of Lake Charles in 1935. Lowery also records 2 specimens which were taken east of the Mississippi River December 23, 1935.

No records of the occurrence of this animal are available from Mississippi or Georgia and but one for Alabama. Taber states that an adult female armadillo was taken within the city limits of Auburn, Alabama, in January, 1939.

For Florida, the earliest available report of this animal is that of H. H. Bailey (1924). He states that a pair from Texas was liberated at Miami during the World War by a marine. One was killed near this city by a dog in 1922 and a female with 4 young was killed there in February, 1924. Other Texas

armadillos are reported (Cocoa Tribune, vol. xx, no. 40, Dec. 10, 1936) to have escaped from a zoo at Cocoa, Brevard County, during a storm in about 1924. I am told one was killed at Flagler Beach, Flagler County, in 1934 and another was taken near Titusville, Brevard County, in 1936. The latter specimen was kept captive at Scholtz Field, in Daytona until its death. On May 2, 1938, the late C. C. Goff found the crushed remains of one on the highway 6 miles south of Indian River City, Brevard County. Mr. J. P. Cowburn, in a personal letter, writes that an armadillo was killed in a swamp near Crescent City, Putnam County, early in the year 1938. He states that the body was 17 and the tail 14 inches in length. He mentions that another specimen was killed in the same region two years earlier. Mr. J. L. Crawford writes that he shot a 12-pound armadillo at Pinemount, Suwannee County, August 3, 1941. This specimen was stuffed and exhibited at the Pinemount Post Office until it was destroyed by insects.*

That these animals are becoming abundant enough to attract attention is evidenced by two letters. One of these, addressed to J. R. Watson, Agricultural Experiment Station, University of Florida, is from a lady who states that, in Titusville, armadillos are rooting up her yard like hogs. The other, addressed to J. C. Goodwin, State Plant Board, is from J. W. Putnam of Oak Hill, Volusia County. He writes that these animals are becoming so numerous in the hammock groves as to be a real menace. They bore into the ground similar to skunks in search of worms and are ruining many gardens as well as causing serious damage to young citrus trees.

From the available distribution records it appears that armadillos in Florida are concentrated east of the St. Johns River in Brevard, Volusia, Flagler and Putnam Counties. The one exception is the record from Suwannee County.

As indicated by the letter referred to above and as mentioned by various authors, the chief damage caused by this animal is due to its rooting with its snout and digging with its powerful claws. As pointed out by Seton (1928) much of its digging is performed in its search for food, but it also digs for a bed, for escape, for a home, for a nursery and for fun. Newman states that its burrows may be 6 or 7 feet deep with a

* The capture of an armadillo in south Jacksonville, Florida, is reported in The Florida Times-Union for October 26, 1943.

chamber at the bottom about two feet in diameter, which is loosely filled with dried leaves and grass.

A pair of animals are often found in the same nest chamber. The period of oestrus comes early in autumn. A large portion of the females taken in October show early stages of pregnancy, but early stages have been found as late as December. The young for the most part are born in March, although births during April are not rare.

The embryonic development of the armadillo is as unusual as the appearance of the animal. Four young, identical quadruplets, and hence all of the same sex, develop from a single fertilized egg. The young are fully formed at birth, with the eyes open. They are able to walk within a few hours after birth and to accompany their parent on foraging expeditions at an early age.

The food of the armadillo is indicated by the analysis of stomach contents of specimens taken in Texas which is reported by Bailey (1931, p. 9) as follows:

"On examination of the stomachs sent in from Bourne one was found empty, but the other three taken January 13 were all well filled, and although it was the time of year when insect life is least in evidence, the determinations of the late F. E. L. Beal showed that the diet was mainly insects, worms, millipeds, and spiders. No. 1 contained identifiable remains of a large number of angleworms and ants, a few carabid and scarabaeid beetles and their larvae, and the larvae of tenebroid and lampyrid beetles and of cockroaches, several brown crickets, and a few spiders and millipeds. No. 2 contained about 80 per cent angleworms, several myriapods, a few carabid and scarabaeid beetles and larvae, young cockroaches, and a grasshopper. No. 3 contained about 70 per cent of angleworms, many myriapods, a few scarabaeid bettles and their larvae, and unidentified larvae of other beetles, young cockroaches, a spider, and a trace of a crawfish.

"All three stomachs taken at Kerrville in May, 1907, were well filled. Their examination by W. L. McAtee showed the following contents: No. 1 contained 43 caterpillars, mostly cutworms, 36 beetles of 11 species, 11 grasshoppers of 5 species, a large number of ants, a few fly larvae, spiders, and myriapods. No. 2 contained a large number of fly larvae, caterpillars, beetles, and ants; a few grasshoppers and bugs, and a cicada, 7 spiders, 30 centipedes, and several myriapods. No. 3 was more than

half filled with 120 caterpillars, mostly cutworms, a large number of beetles and their larvae, a lot of small ants, a grasshopper, a bug, a few crickets, fly larvae, earthworms, centipedes, myriapods, and spiders.

"The wide range of insect food of armadillos seems to include most species with which they come in contact and to consist in greatest bulk of those most numerous and easily obtained. There is no evidence to substantiate the accusations that armadillos destroy garden vegetables or eat the eggs of poultry or game birds; moreover, the small and toothless opening of their mouths would render it difficult, if not impossible, for them to break or eat any but very small eggs or in any way to injure birds or young poultry. Although their food habits require further study, it now seems safe to conclude that armadillos are harmless and in a high degree beneficial mammals, and their extension of range should be welcomed rather than discouraged. The sale of their shells for baskets and curios should be severely condemned, as it threatens the extermination of these extremely interesting and useful little animals."

In captivity, Newman states that they eat meat of all kinds, even exhibiting canabalistic tendencies under certain conditions, for when shipped in crates or boxes the stronger ones kill and disembowel the weaker, and mothers devour their own newborn offspring. Young rabbits are eaten by unconfined armadillos as observed by Newman and Baker (1942).

The lack of teeth in the front part of the mouth of this species precludes biting as an effective method of fighting or securing strong animals for food. However, various authors show that it can use its claws as efficient weapons. It may rear up on its hind legs and strike with its front feet or lie on its back and claw with all four feet. Although its scaly armor is insufficient protection against the stronger carnivores, it is undoubtedly of great use in protecting its occupant against the dense and often spiny cover into which the animal frequently retreats. Oddly enough, its armor has been the cause of the slaughter of many thousands of individuals. By tying the skin of the head and tail together to form a handle, the skin, which contains the scales, forms a basket. Newman states that more than 40,000 of these were sold by a single dealer within a period of six years.

From the records at hand it seems probable that the armadillo already has a substantial foothold in Florida. Judging

from the speed with which its numbers have increased in other states, it can be expected to become abundant in favorable habitats. No doubt its burrowing will damage crops where it becomes abundant. It is equally probable that it will destroy many insect pests, possibly including the screw worm. To the hunter, it will provide another edible game animal. To a biologist, the armadillo in Florida presents many interesting problems and it is the hope of the author that this paper will stimulate those who secure information concerning its activities to record them so as to make possible a scientific solution of the problems involved.

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The
FLORIDA ENTOMOLOGIST

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Gainesville, Florida

VOL. XXVI DECEMBER, 1943 NO. 4

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DR. ELMER DARWIN BALL

Our society lost, also, a prominent former member in the person of Dr. E. D. Ball, well known to Floridians as an investigator, employed for three years by the Florida State Plant Board in charge of the Sanford laboratory for the investigation of the celery leaf-tier and other celery insects. He died in Pasadena, California, October 5, after an illness of five years.

Dr. Ball was born in Athens, Vermont, on September 21, 1870. While he was still an infant, the family moved to Iowa, where he spent his youth and received his early education. The degrees of B.S. (1895) and M.S. (1898) were conferred upon him by the Iowa State College. There he began his science teaching as assistant in zoology and entomology. In 1897, he accepted a similar position in the Colorado Agricultural College where he remained for four years, after which he was teaching in the Utah Agricultural College, where he became dean and director of the Agricultural Experiment Station in 1907. In 1907, he received his Ph.D. from Ohio State University, specializing in leaf-hoppers, which remained his major interest throughout the remainder of his life. After two years as State Entomologist of Wisconsin, he returned to Iowa State College as head of the department of zoology and entomology. From 1921-25, he was director of scientific work in the U. S. Department of Agriculture, from which position he came to Florida in 1925.

In Sanford, his work had to do largely with the ecology of the celery leaf-tier, and he demonstrated that during most years the pest is held down by parasites and other factors, controlled largely by the weather during the winters. He left Florida in 1928, for the University of Arizona, where he became Dean of the College of Agriculture and Director of the Agricultural Experiment Station.

Dr. Ball was a tireless worker. He once called to the attention of the writer, the large number of labels on his leaf-hoppers which bore a date of a vacation day. His extensive collection of leaf-hoppers and related insects is now in the National Museum.

— Ed.

A TROPICAL BOOK WORM IN FLORIDA

Neogastrallus librinocens Fisher, in Florida *(Anobiidae, Col.)*

J. R. WATSON

On March 17th last, we received a letter from Miss Wilma E. Davis of St. Augustine and Anastasia, Florida, stating that some insect was destroying the books in her library — some old books that belong to her father. Our first guess, was naturally that the culprits were either termites or silverfish, but a letter on March 26th gave us more definite information, that they were actually "worms" and brought us an injured book with some debris which she found around some of the books. Some debris and also an injured book were sent to Dr. Back of the Bureau of Entomology and Plant Quarantine, who identified the culprit as the book worm, *Neogastrallus librinocens,* Fisher.

In the Report of the Smithsonian Institution for 1939, on pp. 365-374, Dr. Back gives the history of the discovery of this pest in Florida. It was found in 1937 in the library of St. Leo Abbey. Some of these infested books were traced back to the library of Bishop Moore, of St. Augustine. Many books and records which had been in the Cathedral at St. Augustine during the colonial days; for fear that they might be destroyed when Florida was ceded to the English, were shipped to Havana, Cuba, in 1764. They were deposited in what is now called the Columbus Cathedral. There they remained until found by Bishop Moore, who negotiated their return to the St. Augustine Cathedral; where they arrived in 1913. Dr. Back, then investi-

gated the books in the archives of this Cathedral and found many of them had been heavily infested with the book worms, as were those of the St. Joseph's Academy, also in St. Augustine.

He also located the insects in the library of St. Charles College at Grand Coteau, Louisiana.

Since the publication of this article in the Report of the Smithsonian Institution, Dr. Back writes me as follows: "In June, 1940, I investigated an infestation in the library of the Rt. Rev. John D. Wing, D.D., Bishop of South Florida, Winter Park, Florida. I was in Orlando and went up to Winter Park with Mr. W. W. Yothers. The infestation was typical in a few old books, but was spreading to newer books. I fumigated Bishop Wing's library (a regular library with open shelves) with hydrocyanic acid gas, and an examination one year later showed no evidence of living insects.

"The other bad case was in St. Johns County Court House, St. Augustine. Judge Chas. C. Mathis, Jr., County Judge, wrote us after learning of the trouble in the Rectory of the Cathedral and at St. Joseph's Academy. I examined the County records and found the bindings of some of their older record books very badly eaten. Some of the buckram bindings were breaking as a result of the larval feeding. Most of this trouble was in the vault in Judge Mathis' office, and in the vault of the St. Johns County records. I fumigated both these vaults, also, with hydrocyanic acid gas at the rate of one pound of sodium cyanide per 1,000 cubic feet, and subsequent examinations, the last in October, 1942, indicated that the fumigations were successful.

"Both in Winter Park, where the books were on open shelves and in the vaults in St. Augustine, I did not disarrange the books. Of course, the weather is hot in June so the gas was very effective."

Anastasia Island lies just across the inlet from St. Augustine and Miss Davis writes that her father had been a friend of Bishop Moore and exchanged books back and forth. It seems that the initial infestation in the three widely separated localities in which these tropical insects are known in Florida — i.e., St. Augustine, St. Leo and Winter Park can be traced back to the books and manuscripts and records which were sent to Havana and returned over a century later. From this initial infestation the beetles have spread to other books and records. The infestation Grand Coteau was undoubtedly brought from Havana in a similar manner.

It is hoped that this brief history of the presence of this destructive book worm in Florida may lead others to look for it in other localities. In the report mentioned above, can be found a good illustration of the typical damage done by this insect. Miss Davis also kindly donated to the writer a book which shows the work of this insect.

FOOD HABITS OF SEVERAL SPECIES OF POULTRY LICE WITH SPECIAL REFERENCE TO BLOOD CONSUMPTION

C. M. CRUTCHFIELD and H. HIXSON
University of Florida

The consensus concerning the food habits of poultry lice is that parts of feathers and epidermal scales comprise the food of these parasites. Blood is occasionally mentioned to emphasize that they do not suck blood; however, Wilson (1933) mentions the possibility of *Menopon stramineum* Nitzsch, habitually feeding on blood. He noted blood-like pigment in the gut of a specimen which he found with its mandibles, deeply sunken into the quill of a young feather, in contact with blood. Old injuries on the same feather suggested to him that this type of feeding might be habitual.

To definitely determine whether or not blood forms a part of the normal diet of any of the Mallophaga commonly infesting chickens in the vicinity of Gainesville, Florida, a series of microscopic examinations of the crop contents were made in order to identify the materials consumed. This study was complemented with observations on the location and activity of each species on the host, the feeding habits, and the external condition of individual hosts as associated with the presence or absence of a species.

Crop examinations were made soon after the lice were removed from the body of the host so that the identity of the materials in the crop would not be destroyed by digestion. In determining the presence of blood, the crop was removed from the insect's body and the contents teased out on a microscope slide, allowed to dry, stained with Wright's stain, and examined for red blood cells. To identify other materials, the crop was placed in a drop of water on a microscope slide and the contents teased out for microscopic study. Normal host tissues were

studied to make certain of the identity of the materials found in the insect's crop.

The following species of Mallophaga infesting the domestic fowl, *Gallus gallus* L., were studied: Chicken body louse, *Menacanthus stramineus* Nitz.; shaft louse, *Menopon gallinae* L.; large chicken louse, *Goniocotes gigas* Tasch.; fluff louse, *Goniocotes hologaster* Nitz.; wing louse, *Lipeurus caponis* (L.); and *Menacanthus* sp. The latter species will be referred to in this paper as the fowl body louse. Dr. H. E. Ewing of the United States National Museum, examined specimens of this species and believes that it possibly is undescribed. The specimens sent to him have been referred to Miss Theresa Clay, an authority on Mallophaga.

For the purpose of this paper, the fowl body louse may be distinguished by comparison with the chicken body louse and the shaft louse, with either of which it is apt to be confused. It is very similar to the immature of the chicken body louse, but differs from the adult in that it is much smaller in size. Its size range is about the same as that of the shaft louse, but differs in that the abdomen of the female is broader and does not taper to a point as in the shaft louse. The lacinia of the maxilla is the most noteworthy character in separating these species. In the fowl body louse this structure appears proportionally large; in the chicken body louse it is comparatively small; and in the shaft louse it is scarcely evident.

In the study of the chicken body louse, examinations of crop contents revealed that the bulk of the material was barbs and barbules of feathers, but the presence of blood could be detected in a majority of the specimens and in many instances it made up a considerable portion of the contents. There was nothing among the materials from the crop to indicate that epidermal scales constitute a part of the diet. However, debris such as particles of sand and in one case, a section of a mammalian hair, was found among the materials from the crop which indicates that any small particle on the host may be consumed.

Nucleated red blood cells of the host were identified in the crop contents of specimens from every infestation microscopically checked. The high incidence of individuals with blood pigment in the gut which varied from bright red to a dark coloration, is sufficient evidence that this species normally feeds on blood. Skin conditions, particularly in the abdominal region of the host, and quill injury, on heavily infested birds, demon-

strate conclusively the manner in which blood is normally obtained by this parasite. Patches on the skin indicated that the epidermis had been gnawed away; tiny blood clots and scabs which sloughed as thin papery sheets, was evidence that there had been an ooze of the body fluids. This condition was found only on birds infested with a comparatively large colony of this species. Quill ruptures were common on heavily infested birds and new injuries were easily induced to bleed.

The activity and feeding habits of the fowl body louse are quite similar to those of the chicken body louse, but its range of activity is not localized in any respect to the abdominal region. Barbs, barbules and red blood cells were found in the crop of this species in about the same proportion as in the chicken body louse. The high incidence, among indivduals, of blood pigment in the gut, under natural conditions and in the absence of the chicken body louse, is evidence that blood forms a part of the normal diet of this species. The fowl body louse was studied in the absence of the chicken body louse in only two infestations.

The shaft louse may be found on the skin and on the feathers of its host, nevertheless, this species feeds exclusively on barbs and barbules. Examinations of the crop contents of specimens from several sources gave conclusive evidence that this species feeds largely on barbules and to a minor extent on barbs. There is no tendency in this species to feed on blood at any time, even when blood feeding species are present to create conditions conducive to blood consumption. With the exception of an occasional grain of sand, no other material was found in the crop of this species.

The wing louse feeds largely on the hooklets of the primary and secondary wing feathers. In practically all specimens, the crop contents consisted almost entirely of hooklets. An occasional specimen had consumed barbs and barbules which was evidence that the louse had fed near the base of the wing feathers or on feathers of the neck or body. Examination of flight feathers from which specimens were taken, showed clearly defined lines extending from the outer edge of the feather toward the shaft where the hooklets had been chewed off.

Only barbs and barbules were found in the crop contents of specimens of the large chicken louse and the fluff louse. The greater part of the ingested materials was barbs. This and the fact that these two species are usually found in the fluff of the feathers, is evidence that their food consists largly of barbs.

SUMMARY AND CONCLUSIONS

This investigation changes the general conception concerning the materials consumed by poultry lice and offers a basis for a better explanation of the relative economic importance of the different species. Barbs and barbules of feathers and blood comprise the food of the chicken body louse (Menacanthus stramineus) and a species of Menacanthus unrecognized, heretofore, as a pest of poultry in the United States. These species obtain blood by gnawing through the epidermis of the skin and rupturing the quill of pin feathers. The diet of the shaft louse (Menopon gallinae) consists of barbs and barbules. The wing louse (Lipeurus caponis) feeds on hooklets of the flight feathers; occasionally, barbs and barbules form a part of the diet. The large chicken louse (Goniocotes gigas) and the fluff louse, (Goniocotes hologaster) feed largely on barbs and to some extent on barbules.

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PROCEEDINGS OF THE ANNUAL MEETING OF THE FLORIDA ENTOMOLOGICAL SOCIETY

Gainesville, Florida, December 10-11, 1943

The 1943 annual meeting of the Society was held in connection with the annual meeting of the Florida Academy of Sciences and the Florida Section of the American Chemical Society. Papers and talks by members of the Society were presented at two joint sessions with the Academy, with President T. H. Hubbell presiding. An interesting feature of the program was an informal discussion of the methods used at the laboratory of the Bureau of Entomology and Plant Quarantine, located at Orlando, Florida, for the investigation of insects affecting man. Messrs. A. H. Madden, B. V. Travis, and C. B. Wisecup of the Bureau staff discussed the activities of the laboratory under the following headings: The Organization, Function and Relationship of the Orlando Laboratory to the War Effort; Methods Used in Testing Repellents for Flying and Biting Insects; Methods Used in Testing Repellents for Crawling and Biting Insects;

and Methods of Testing Anopheline Larvicides. President T. H. Hubbell chose the topic, Endemism and Speciation in Florida Orthoptera, as the topic of his annual address. Other papers presented by members of the Society were: Factors Which Influence the Results from the Application of Poison Baits for the Control of Mole Crickets, by C. B. Wisecup; Broods of Florida Butterflies, by J. R. Watson; and *Crambus haytiellus* (Zincken) as a Pest of Carpet Grass, by W. D. Wylie. About twenty members of the Society and a number of visitors attended the meeting.

BUSINESS MEETING

The business session of the Society was held Saturday afternoon, December 11, 1943.

REPORT OF THE SECRETARY

The report of the Secretary was read and approved as read.

REPORT OF THE TREASURER-BUSINESS MANAGER

For the Year Ending December 1, 1943

Receipts:

Balance on Hand, December 1, 1942	$ 67.61
From Dues of Members	87.50
From Subscriptions to the Florida Entomologist	59.50
From Advertising in the Florida Entomologist	90.00
From Sale of Back Numbers of the Florida Entomologist	41.10
From Members for Reprints, Cuts, etc	19.80
Transfers from Savings Account	6.86
Total	$372.37

Expenditures:

Cost of Printing the Florida Entomologist	$184.60
Postage, Stationery, and Other Supplies	43.00
Exchange on Checks and Money Orders at Bank	3.49
Miscellaneous	6.00
Total	$237.09
Balance on Hand, December 1, 1943	$135.28

Assets Not Shown Above:

Due from Members for Back Dues	$ 20.00
Due from Delinquent Subscribers	6.75
Due from Members for Reprints, Extra Publication Costs	22.20
Total	$ 48.95

Liabilities:

The Society has no outstanding liabilities as of December 1, 1943.

Respectfully submitted,
C. B. WISECUP, *Treasurer-Business Manager*

On motion the report of the Treasurer-Business Manager was accepted, subject to approval of the Auditing Committee.

REPORT OF THE AUDITING COMMITTEE

I have examined the boks of the Treasurer-Business Manager and wish to report that I have found the accounts accurate and in order.

Respectfully submitted,
R. L. MILLER

On motion the report of the Auditing Committee was accepted.

REPORT OF THE MEMBERSHIP COMMITTEE

The Membership Committee recommends that the following associate members be raised to the rank of active membership: Robert Burrell, O. W. Calkins, George Culpepper, C. C. Deonier, Paul M. Eide, John M. Frederick, J. B. Gahan, Phillip Granett, Mrs. H. Hainlin, E. G. Kelsheimer, E. F. Knipling, A. W. Lindquist, L. C. McAlister, W. C. McDuffie, J. M. Osorio, Jack C. Russell, L. C. Scaramuzza, H. O. Schroeder, Mike Wright, and W. D. Wylie. The committee further recommends that the following be elected to associate membership: J. M. Crevasse, Pfc. R. G. Dahms, Cpl. James E. Gillaspy, Lt. E. S. Herald, H. S. McClanahan, and Paul T. Riherd.

Respectfully submitted,
C. B. WISECUP, *Chairman*
A. H. MADDEN
R. L. MILLER

On motion this report was approved and the above persons were delclared elected to membership.

REPORT OF THE RESOLUTIONS COMMITTEE

—I—

WHEREAS, it has pleased Almighty God to take Doctor Wilmon Newell away from this world, and

WHEREAS, he was a born leader of men and a tireless worker, but not a hard task-master inasmuch as he had about him a quality that attracted and endeared him to people in all stations of life, a quality that led them to follow along paths, frequently difficult, outlined by him, and

WHEREAS, he was not a seeker of fame but fame sought him out so that he achieved national and international recognition as an entomologist, executive and administrator, and

WHEREAS, The Florida Entomological Society, as well as entomological societies and associations throughout the country, have lost a fellow worker, a fine cooperator, and a dear friend whose breadth of vision and generous

counsel will be missed by those who have known and worked with him, and as well as many others who, while not closely associated, have benefitted from his great work, it seems fitting to cite the following facts of his life:

Wilmon Newell was born in Hull, Iowa, March 4, 1878. There he received his primary education. The degrees of B.S., M.S., and Sc.D. (Honorary) were conferred upon him by Iowa State College and the degree of Sc.D. (Honorary) by Clemson College. His outstanding activities along entomological lines while he was Assistant Entomologist at Iowa and Ohio Experiment Stations; Assistant Entomologist and Apiarist and later Professor of Entomology at the Texas Experiment Station, Agricultural and Mechanical College; State Entomologist of Georgia; Entomologist, Louisiana Experiment Station and Secretary and Entomologist of the State Crop Pest Commission of Louisiana brought about his recognition as a distinguished investigator and administrator. In 1915 he was persuaded to come to Florida to accept the position of Plant Commissioner of the newly created State Plant Board. His first task in Florida was the eradication of citrus canker, a bacterial disease that threatened the existence of the citrus industry. In 1921 he was given additional duties as Director of the University of Florida Agricultural Experiment Station and Extension Service and as Dean of the College of Agriculture. In 1938 he became Provost for Agriculture. His administration of these agricultural agencies, together with the successful eradication of the Mediterranean fruit fly, added to his laurels.

Dr. Newell was a fellow of the American Association for the Advancement of Science; a past president of the American Association of Economic Entomologists; a past president of the Southern Agricultural Workers; a member of the Entomological Society of America; a representative of the University of Florida in the Institution for Research in Tropical America; and a member of many other professional and civic organizations. He was a charter member of the Florida Entomological Society and played a prominent part in the founding of the Society. He was its Vice-president in 1920 and was Associate Editor of the FLORIDA ENTOMOLOGIST from 1919 to 1931.

NOW, THEREFORE, BE IT RESOLVED, that the Florida Entomological Society in meeting assembled this 11th day of December 1943, make this record in testimony of our appreciation of the inspiring leadership and service rendered by Doctor Newell and the loss we have sustained, and

BE IT FURTHER RESOLVED, that the Secretary of the Society be, and he hereby is instructed to inscribe this resolution in the Society's minute book and to send a copy to Mrs. Helen M. Newell.

—II—

WHEREAS, the 1943 anunal meeting of the Florida Entomological Society has been one of pleasure and profit through the united effort and cooperation of various individuals and organizations,

NOW, THEREFORE, BE IT RESOLVED, that the thanks of the Society be and hereby are extended to:

1. President John J. Tigert and his associates in the University for

making available suitable meeting places and for assisting in many ways in a most gracious manner;

2. To the officers and members of the Florida Academy of Sciences, the Florida Section of the American Chemical Society, and the Soils Society of Florida for their kindness and cooperation in assisting us in maintaining this meeting at the high standard that has been set;

3. To the speakers who have contributed to our program;

4. To the officers and members of the committee for their faithful service during the past year;

5. To all state papers and magazines for publishing information concerning our meeting and program.

Respectfully submitted,
ARTHUR C. BROWN
J. R. WATSON

On motion the report of the Resolutions Committee was approved.

OLD BUSINESS

Due notice having been given regarding a proposed change in the by-laws relative to members delinquent in their dues (published in the Florida Entomologist, Vol. 25; 60, Jan. 1943) this matter was presented to the Society for final action.

On motion this revision was approved and incorporated in the By-Laws of the Society.

NEW BUSINESS

Because the joint meeting with the Florida Academy of Sciences proved so successful it was suggested that affiliation with that organization might be desirable.

On motion it was proposed and approved that retiring President Hubbell investigate the matter to learn what would be involved in such an affiliation and report to the next annual meeting of the Society.

REPORT OF THE NOMINATING COMMITTEE

The committee wishes to nominate the following members to fill the designated offices and positions for the year 1944:

President—A. H. Madden
Vice-President—Arthur C. Brown
Treasurer-Business Manager (for 3 years)—C. B. Wisecup
Secretary—A. N. Tissot
Editor of the Florida Entomologist—J. R. Watson
Associate Editor—E. W. Berger
Member of the Executive Committee—B. V. Travis

Respectfully submitted,
HOMER HIXSON, *Chairman*
G. B. MERRILL
B. V. TRAVIS

On motion the report of the Nominating Committee was accepted and the Secretary was instructed to cast an unanimous ballot for the election of the persons nominated.

Following the transaction of the above business, the meeting adjourned.

Respectfully submitted,
A. N. TISSOT, *Secretary*

MELIPOTIS ACANTOIDES (Guen) IN FLORIDA

J. R. WATSON

The Royal Poinciana, *Delonix regia* (Baj) Raf. is usually quite free from serious insect pests, but for the past two years we have been receiving complaints of a caterpillar which defoliates the trees. We received the first larvae and pupae from St. Petersburg on January 14, 1942. The moths emerged in about a month and were identified by Mr. Carl Heinrick as *Melipotis acántoides*, a moth belonging to the *Phalaenidae (Noctuidae)*. This moth is listed in Holland's "Moth Book" as *M. sinulis* Harvey. Holland states that it ranges from Texas and Arizona, south. He does not mention Florida as in its range. Under the same synonym it is listed in Grossbeck's "List of Florida Lepidoptera" as from Miami. No host plant is given.

The insect seems to be about as widely spread in Florida as the Royal Poinciana, occurring from St. Petersburg, south, to Key West. Several observers report that, at least the larger caterpillars, seek shelter in the ground during the daytime and come out at night to feed. They will also collect under any band or shade that is provided on the tree. There, evidently, are several broods a year, as the pest, at least in Key West, is active the year around. There are many points in its life history that need clearing up and this notice is being written, in the hope that our readers, who may have the opportunity to observe this pest, will contribute something to our knowledge of its distribution and its habits. Attempts to raise it in the laboratory, on other legumes, which are fairly closely related to the Royal Poinciana, has uniformly failed.

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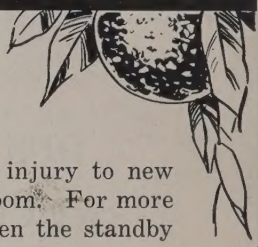

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